## Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

## Listing of Claims:

1.  (Cancelled).


2.  (Currently Amended) The system of claim 5~~1~~, wherein the store buffer assists the CPU in speculatively executing the optimized code regions by temporarily storing results produced during the speculative execution of the optimized code regions.


3.  (Currently Amended) The system of claim 5~~1~~, wherein the compiler improves performance of the computer program by applying standard available optimizations.


4.  (Cancelled).


5.  (Currently Amended) A ~~The~~ system ~~of claim 4, wherein~~


    a ~~the~~ compiler to compile a computer program , the compiler forming optimized code regions to ~~improves~~ performance of the computer program by selecting a seed block, duplicating the seed block, and growing the seed block to form a region, and by trimming blocks near a head block of the region to form a trimmed region having improved scheduling cycles;
    a memory to store the compiler;
    a central processing unit (CPU) cooperatively connected to the memory to run the compiler and to speculatively execute the optimized code regions; and

a store buffer connected to the CPU to improve the speed at which the CPU speculatively executes the optimized code regions.

6. (Currently Amended) The system of claim 54, wherein the compiler improves performance of the computer program by trimming blocks near a tail block of the region to form a trimmed region having improved scheduling cycles.

7. (Currently Amended) The system of claim 54, wherein the compiler improves performance of the computer program by updating a branch frequency for an original code corresponding to the region to form an improved region.

8. (Cancelled).

9. (Currently Amended) The method of claim 118, wherein the improving performance of the computer program further includes applying standard available optimizations to the formed regions.

10. (Cancelled).

11. (Currently Amended) A The method of claim 10, wherein the comprising:
compiling a computer program;
improving performance of the computer program further includes by (i) selecting a seed block, duplicating the seed block, and growing the seed block to form a region, and (ii) trimming blocks near a head block of the region to form a trimmed region of having improved scheduling cycles;
storing temporarily the results produced during execution of formed regions to handle infrequent code being actually executed; and

committing the results produced when the execution of the region is completed
successfully.

12.    (Currently Amended)  The method of claim ~~10~~11, wherein the improving
performance of the computer program further includes trimming blocks near a tail
block of the region to form a trimmed region having improved scheduling cycles.

13.    (Currently Amended)  The method of claim ~~10~~11, wherein the improving
performance of the computer program further includes updating a branch frequency for
an original code corresponding to the region to construct an improved region.

14.    (Currently Amended)  A machine-readable medium comprising
instructions which, when executed by a machine, cause the machine to perform
operations comprising:
   compiling a computer program;
   improving performance of the computer program by (i) selecting a seed block,
duplicating the seed block, and growing the seed block to form a region, and trimming
blocks near a tail block of the region~~optimizing frequently executed code and using
compiler transformation and hardware support to handle infrequently executed code~~;
   storing temporarily the results ~~of~~ produced during execution of a region to
improve performance of the computer program; and
   committing the results produced when the execution of the region is completed
successfully.

15.    (Original)  The machine-readable medium of claim 14, wherein the
improving performance of the computer program further includes applying standard
available optimizations.

16.     (Cancelled).


17.     (Currently Amended)  The machine-readable medium of claim ~~16~~14, wherein the improving performance of the computer program further includes trimming blocks near a head block of the region.


18.     (Cancelled).


19.     (Currently Amended)  The machine-readable medium of claim ~~16~~14, wherein the improving performance of the computer program further includes updating a branch frequency for a original code corresponding the region.